

Work Order ID 146103

Friday, May 06, 2016 8:59:38 AM

146103

Page 1

Item ID: D3651-11 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Gasket
 Start Date: 5/4/2016 Start Qty: 4.00 ***4*** Cust Item ID:
 Required Date: 5/5/2016 Req'd Qty: 4.00 ***4*** Customer:
 Reference:

Approvals: Process Plan: Rem Date: 16/05/09 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start ***NR1***
 Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3651	Rev B								

100

0.00

100

Waterjet

FLOW CNC Waterjet

FLOW WATER JET

Memo

1.44

1-Cut as per Dwg D3651Dwg Rev: B Prog Rev: B 2-Deburr
 if necessary

(5)

De 16/07/04

110

0.00

110

QC

Quality Control

QC2- Inspect parts off machine FAI/FAIB

Memo

0.04

(5)

De 16/07/04

120

0.00

120

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.08

(5)

DAS
38
9-89

JUL 04 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause				FAULT CATEGORY					
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐								
Misidentified ☐	Past Due ☐	OTHER : _____							

Work Order ID 146103

Friday, May 06, 2016 8:59:38 AM

146103

Page 2

Item ID: D3651-11

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Gasket

Start Date: 5/4/2016 Start Qty: 4.00

4

Cust Item ID:

Required Date: 5/5/2016 Req'd Qty: 4.00

4

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: 51233A	0.00							
130						5	0.00	JUL 06 2016	
Packaging	Memo	0.04							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.40							10/7/7
Quality Control									

DAS
21
9-89
JUL 06 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																						OTHER : ☐																																									

Picklist Print

Friday, May 06, 2016 8:59:38 AM

Page 1

Work Order ID: 146103

146103

Parent Item: D3651-11

D3651-11

Parent Item Name: Gasket

Start Date: 5/4/2016

Required Date: 5/5/2016

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev:A New Issue 07-09-27 DD verified by: EC
IPP Rev:B ECN 1113P 08-01-22 DD
IPP Rev:C ecn1162 08-04-02 DD verified by: ec

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

G89		Purchased		No		100	sf	0.0000	0.686	2.888421			
-----	--	-----------	--	----	--	-----	----	--------	-------	----------	--	--	--

G89

Coated Cloth

DC 116/07/04

132665

3.5

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval 		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	Pressure/Forced ☐	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	☐ Offset/Setup	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	☐ Supplier	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	☐ Training	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	☐ Use for Testing	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	☐ Poor Information	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	☐ Rushing	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	☐ Product Improvement	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	☐ Process Improvement	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

DART AEROSPACE LTD		Work Order:	146103
Description: Gasket		Part Number:	D3651-11
Inspection Dwg: D3651	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

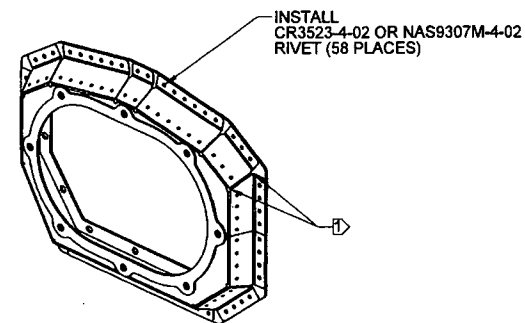
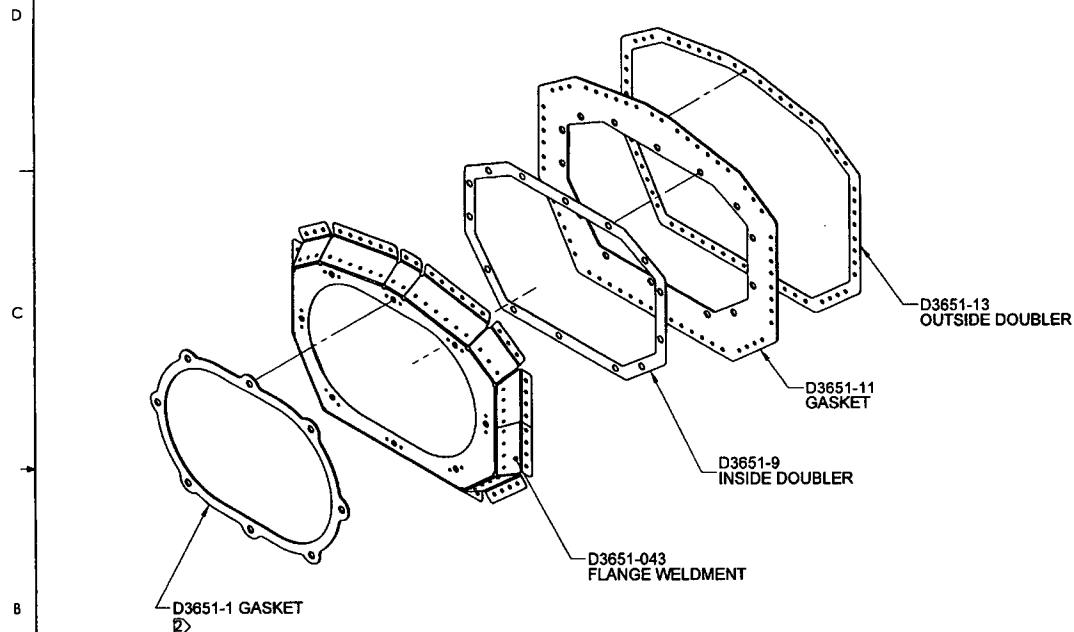
☒ First Article
 ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	Ø.130	/		V-D-02	
Ø0.250	+0.005/-0.001	Ø.250	/		Tap	
8.74	+/-0.030	8.74	/		V-D-01	
11.62	+/-0.030	11.62	/			
1.62	+/-0.030	1.62	/			
1.41	+/-0.030	1.41	/			
0.500	+/-0.010	.500	/			
0.600	+/-0.010	.600	/			
0.634	+/-0.010	.634	/			
2.564	+/-0.010	2.564	/			
2.081	+/-0.010	2.081	/			
3.731	+/-0.010	3.731	/			
2.100	+/-0.010	2.100	/			
9.706	+/-0.010	9.706	/			
7.969	+/-0.010	7.969	/			
6.96	+/-0.030	6.96	/			
5.698	+/-0.010	5.698	/			
3.698	+/-0.010	3.698	/			
2.564	+/-0.010	2.564	/			
2.020	+/-0.010	2.020	/			
3.284	+/-0.010	3.284	/			
2.200	+/-0.010	2.200	/			
2.750	+/-0.010	2.750	/			
9.521	+/-0.010	9.521	/			
10.22	+/-0.030	10.22	/			
1.373	+/-0.010	1.373	/			
1.62	+/-0.030	1.62	/			
3.564	+/-0.010	3.564	/			
4.236	+/-0.010	4.236	/			
5.636	+/-0.010	5.636	/			
7.049	+/-0.010	7.049	/			

Measured by:	pc	Audited by:	38 9-89	Prototype Approval:	N/A
Date:	16/07/04	Date:	JUL 04 2015	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.04.17	New Issue	KJ/DD	

8 7 6 5 4 3 2 1



PART LIST

QTY	PART NUMBER	DESCRIPTION
X	D3651-041	AFT BASE ASSEMBLY
1	D3651-043	FLANGE WELDMENT
1	D3651-1	GASKET
1	D3651-9	INSIDE DOUBLER
1	D3651-11	GASKET
1	D3651-13	OUTSIDE DOUBLER
58	CR3523-4-02 or NAS9307M-4-02	RIVET

D3651-041 AFT BASE ASSEMBLY

RELEASED
28-03-27/10

D3651-041 NOTES:

- 1) SEAL ALL MATING SURFACES AND GAPS USING PROSEAL 700 FIRE WALL SEALANT
- 2) INSTALL D3651-1 USING 3M HIGH PERFORMANCE CONTACT ADHESIVE 1357
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 1.6 lbs

B	SHEET 1: GENERAL UPDATE SHEET 2: 8.74 WAS 8.50; 0.88 WAS 0.98; REMOVED ANGLE SHEETS 4, 5, 6, 8 & 9: GENERAL DIMENSIONAL UPDATE SHEET 7: 5.514 WAS 5.504	RF	08.01.07
A	NEW ISSUE	RF	07.11.07
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3651	SHEET 1 OF 9
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	AFT BASE ASSEMBLY	1:4
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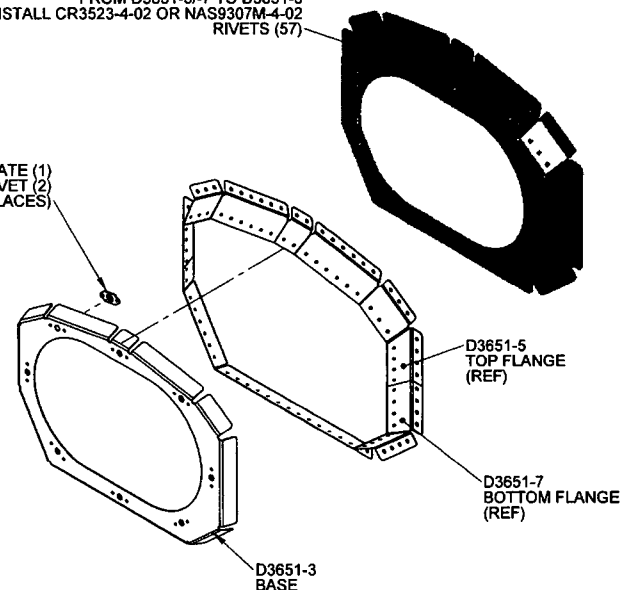
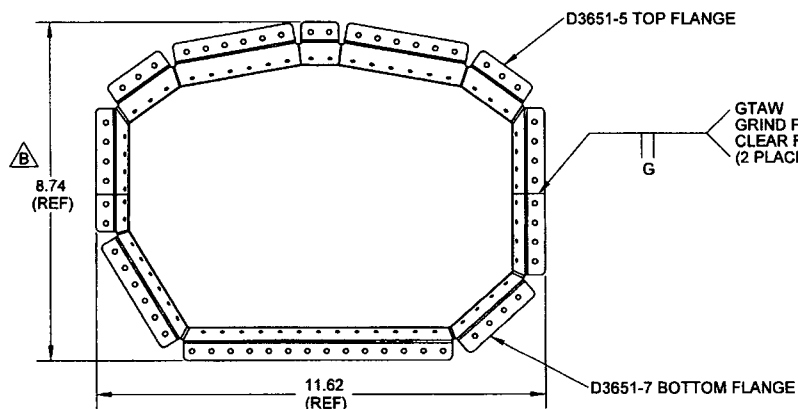
wb 146103

2m 16/05/09

TRANSFER DRILL $\varnothing 0.129$ (#30 DRILL)
FROM D3651-5/-7 TO D3651-3
INSTALL CR3523-4-02 OR NAS9307M-4-02
RIVETS (57)

MS21060-3K NUTPLATE (1)
MS20427M3-3 RIVET (2)
(8 PLACES)

G
GTAW
GRIND FLAT TO
CLEAR FASTENERS
(2 PLACES)



QTY -043	PART NUMBER	DESCRIPTION
X	D3651-043	FLANGE WELDMENT
1	D3651-3	BASE
1	D3651-5	TOP FLANGE
1	D3651-7	BOTTOM FLANGE
16	MS20427M3-3	RIVET
8	MS21060-3K	NUTPLATE
57	CR3523-4-02 or NAS9307M-4-02	RIVET

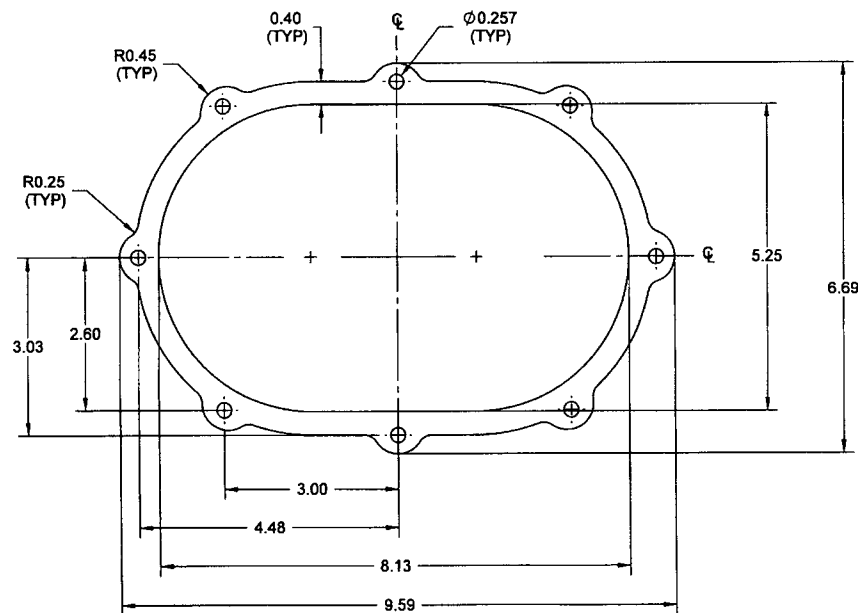
D3651-043 FLANGE WELDMENT

D3651-043 NOTES:

- 1) WELD PER QSI 004
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.76 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	RF	DRAWING NO. D3651	REV. B
MFG. APPR.	RF	SHEET 2 OF 9	
APPROVED	RF	TITLE AFT BASE ASSEMBLY	SCALE 1:3
DE APPR.	RF	DATE 08.01.07	

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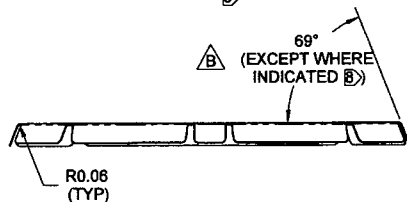
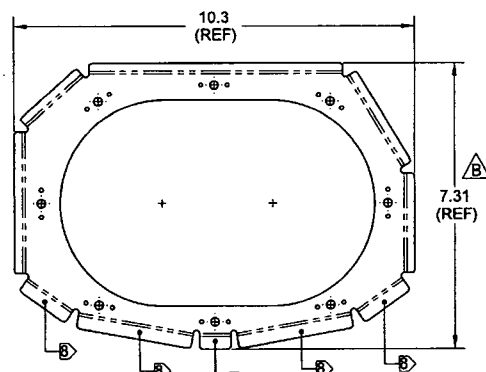
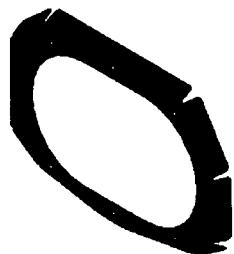
D3651-1 GASKET

NOTES:

- 1) MATERIAL: THERMO-CHEM P/N G-89, (REF. 0.060 THICK)
POSSIBLE SUPPLIER: A.R. THOMSON GROUP
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) PART IS SYMMETRIC ABOUT ϕ
- 8) WEIGHT: 0.09 lbs

RELEASED
08-03-27/140

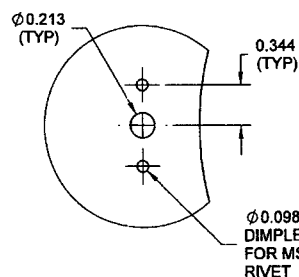
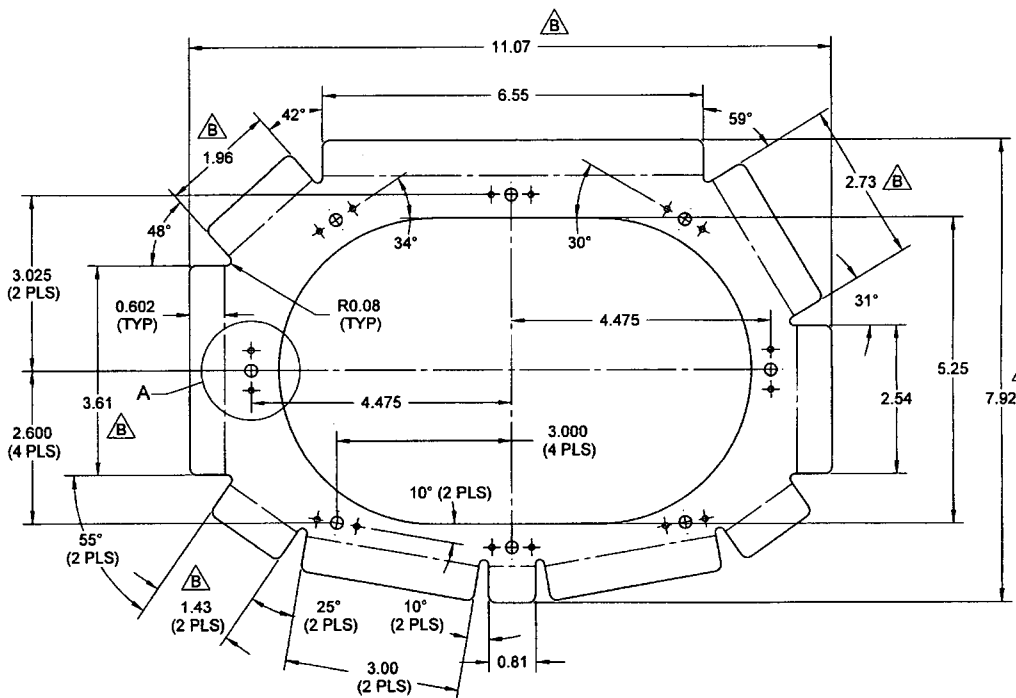
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	ME	DRAWING NO.	REV. B
MFG. APPR.	ME	D3651	SHEET 3 OF 8
APPROVED	ME	TITLE	SCALE
DE APPR.	ME	AFT BASE ASSEMBLY	1:2
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D3651-3 BASE
(MAKE FROM D3651-3F FLAT PATTERN)

NOTES:

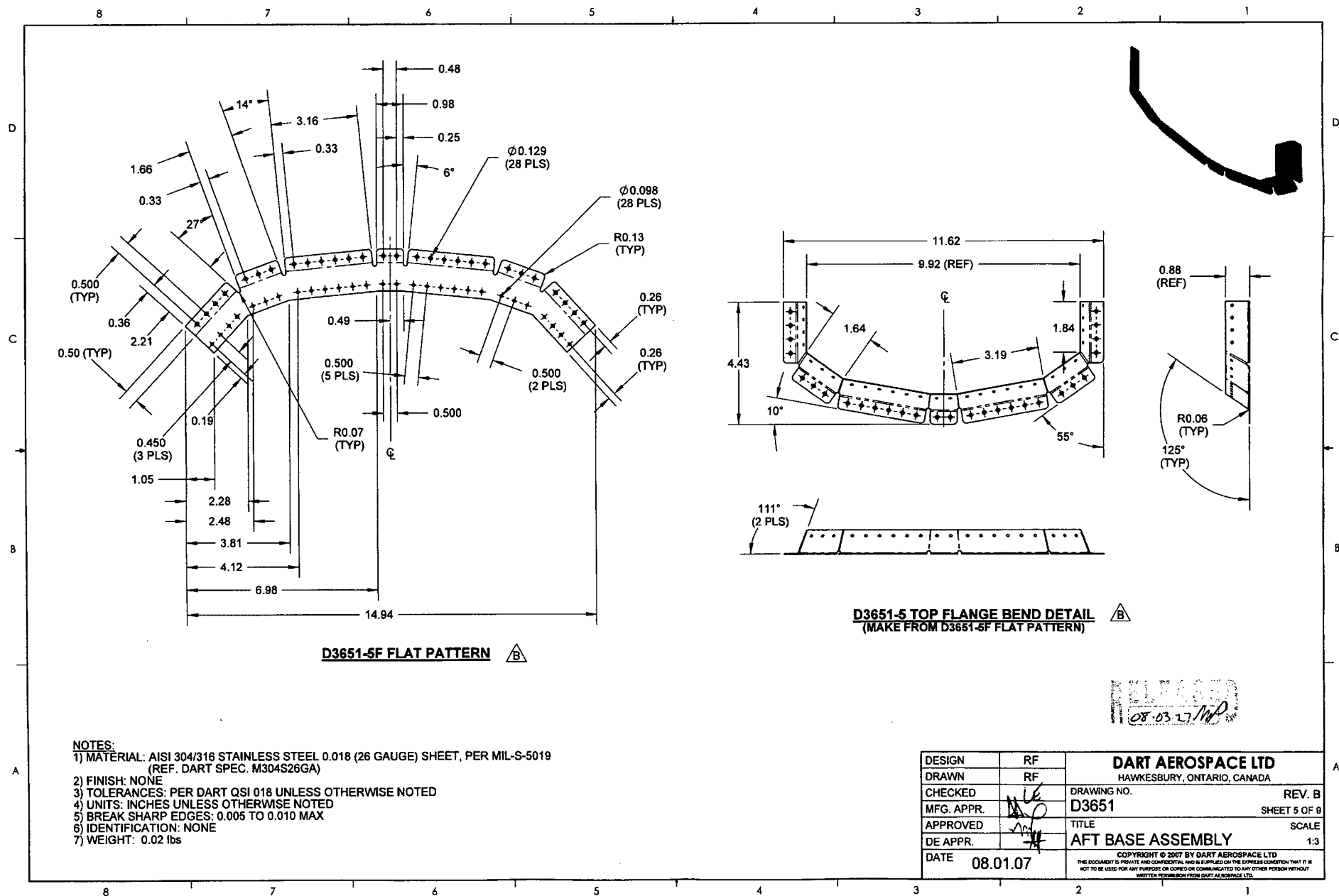
- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.27 lbs
- 8) BEND TO 55° WHERE INDICATED

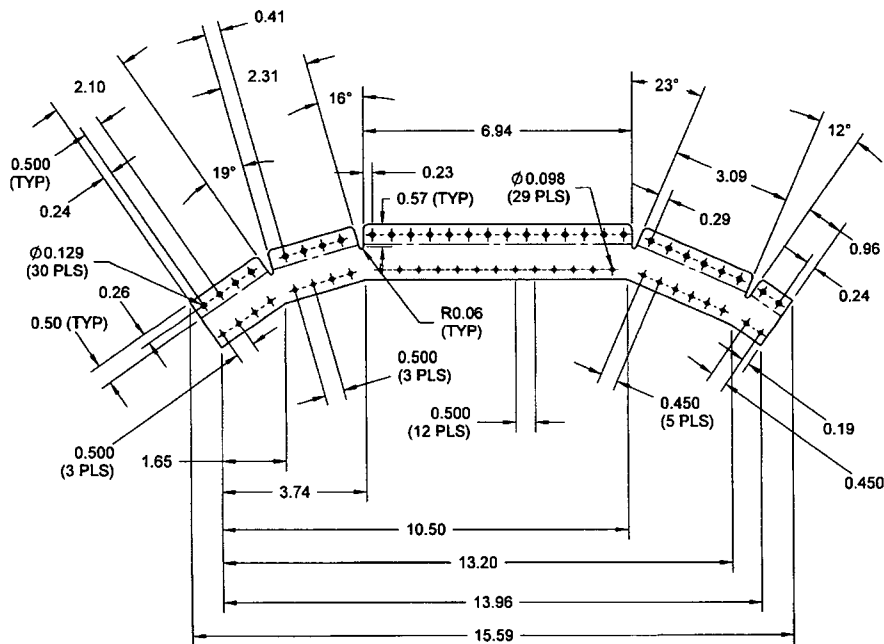


DETAIL A

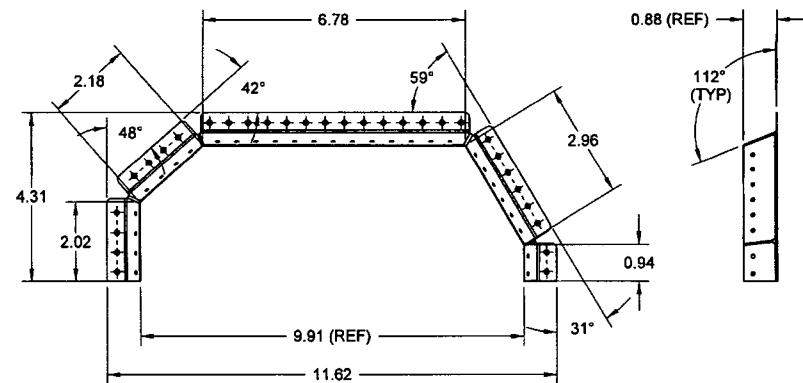
D3651-3F FLAT PATTERN

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. B
MFG. APPR.	RF	D3651	SHEET 4 OF 9
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	AFT BASE ASSEMBLY	1:2
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D3651-7F FLAT PATTERN

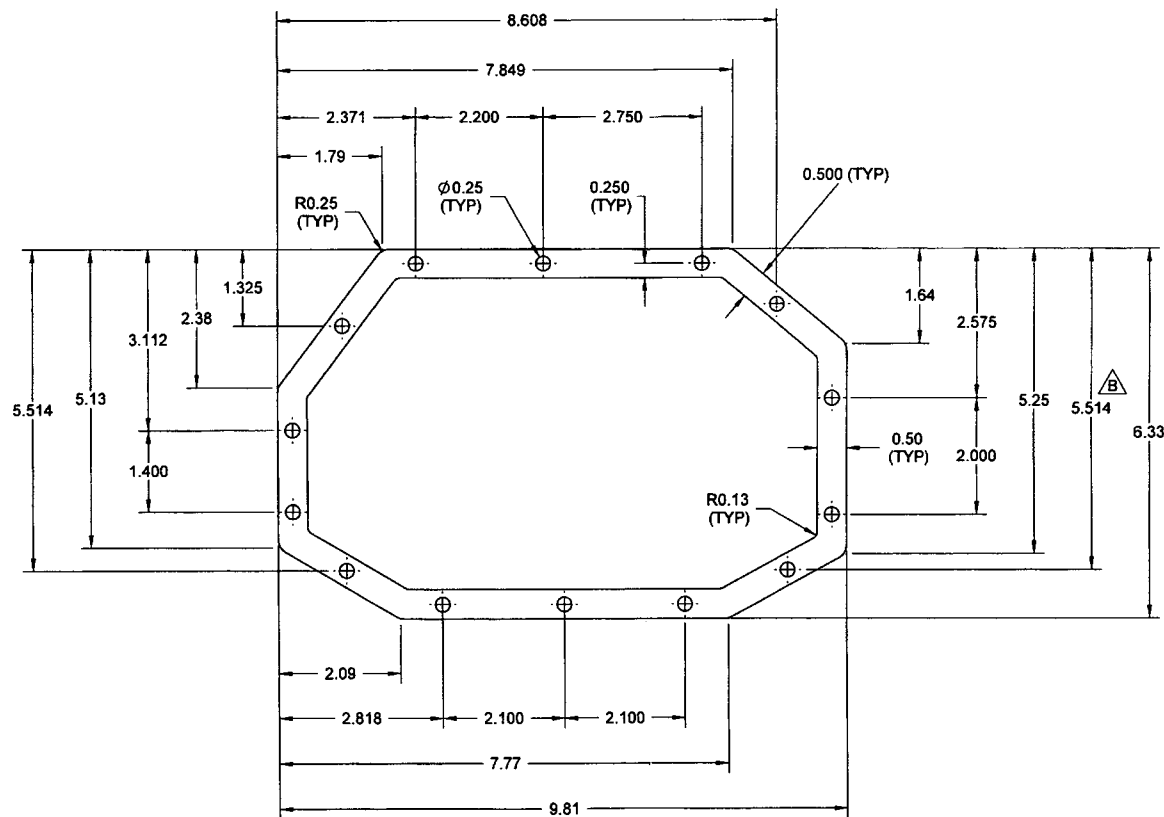


D3651-7 BOTTOM FLANGE BEND DETAIL
(MAKE FROM D3651-7F FLAT PATTERN)

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.02 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>NE</i>	DRAWING NO. D3651	REV. B
MFG. APPR.	<i>MD</i>	SHEET 6 OF 9	
APPROVED	<i>MD</i>	TITLE	SCALE
DE APPR.	<i>MD</i>	AFT BASE ASSEMBLY	1:3
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D3651-9 INSIDE DOUBLER

NOTES:

- 1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.07 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	LE	DRAWING NO.	REV. B
MFG. APPR.	LE	D3651	SHEET 7 OF 9
APPROVED	LE	TITLE	SCALE
DE APPR.	LE	AFT BASE ASSEMBLY	1:2
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